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CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

CD NO.

COUNTRY Austria/Czechoslovakia/Hungary/
Yugoslavia/Bulgaria/Rumania

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SUBJECT Inland Waterways - Notes on the Danube.

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THIS IS UNEVALUATED INFORMATION

1. Overall length: 1725 milesDrainage area: 310,000 square miles2. Precipitation:

In Upper Basin (Alps) - 40 - 80 inches p.a.

In Upper Stretch - 38 inches p.a.

In Lower Stretch (Rumania) - 15 - 20 inches p.a.

3. Runoff:

In Upper Stretch - 52 per cent

In Lower Stretch - 30 per cent

4. Gradient:

c. On Czechoslovakian stretch - from 2.4 to 0.02 feet per mile

d. Below Czechoslovakian stretch approximately 1.5 to 0.6 feet
per mile except the Iron Gate section with its cataracts5. Current:

c. On Czechoslovakian Danube - from 2.5 to 0.25 miles per hour

d. On Yugoslavia-Rumanian section at the Iron Gate, where the
river flows in narrow rocky gorge - 11 miles per hour at low
water

e. Below the Iron Gate section from 2.5 to 1 foot per hour

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6. Width:

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- c. On Czechoslovakian Danube - from 1,200 to 2,700 feet, divided in several arms
- d. On Hungarian Danube - 1,200 - 3,000 feet
- e. On Yugoslavian, Bulgarian and Rumanian Danube - 4,500 feet

7. Depth:

- a. In the upper sections - from 5 to 6 feet at low water
- b. In the lower sections almost always over 6 feet except in the Iron Gate section, where it is less than 5 feet
- c. The maritime Danube in Rumania from Braila to Black Sea - 21 feet at low water level

8. Discharge:

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- c. On Czechoslovakian Danube at Bratislava - from 26,000 cfs at low water to 380,000 cfs at high water level
- d. At the Iron Gate rapids - from 55,000 cfs at low water to 570,000 cfs at high water level

9. Seasonal variation of flow:

The following variations of flow (given in cubic meters per second) in Vienna (in an average year) shows the general pattern:

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|------|------|------|------|-------------|------|------|------|------|------|-------------|------|
| 1407 | 1307 | 1490 | 1837 | <u>2460</u> | 2418 | 2425 | 1935 | 1855 | 1315 | <u>1155</u> | 1220 |

10. Bed of Stream:

Fine sand in lowland stretches with following exceptions: erosion stretches, rocky subsoil, cataracts and steep slopes

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In Yugoslavia and Rumania:

The Iron Gate section (75 miles)

11. Bank Stabilization Works:

Regulation fascine and stone works

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12. Fordability:



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b. In Czechoslovakia:

So called "Velky Zytin Ostrov" a deposit of boulders in the low-lying Bratislava plain, due to the big difference in the slopes of the Danube from 2.4 to 0.02 feet per mile. (kilometer post 1,830 - 1,810)

13. Hazards:

In the erosion stretches with rocky subsoil, as mentioned above under "Bed of Stream".

14. Port Improvements:

Bratislava, Komazro, Budapest, Novi Sad, Beograd, Vidin, Braila, Galati, Sulina.

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15. Aids to Navigation:

The river is provided with buoys, lights, channel markers etc.

16. Control Works:

There were numerous (over one hundred) dams and reservoirs in the Alpine district which developed about 1,000,000 kw and at the same time regulated the flow and navigation conditions on the Danube.

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